EMLN: EL493560363US

ABSTRACT

The present invention relates to a miniature rheometer, a parallel rheometer, and improved force sensor elements which may advantageously be used in combination with the miniature rheometer and the parallel rheometer. The miniature rheometer is adapted to determine rheological characteristics of materials which are provided in the form of small quantity samples. The miniature rheometer comprises an actuating element, a sensing element and a feedback circuit to provide rebalance of the shear force applied by the sample to the sensing element, which insures an exceptional stiffness in determining the shear strain so as to allow measurements of high accuracy. The parallel rheometer of the present invention allows simultaneous measurements of a plurality of samples so as to allow of a plurality of samples within a short time period. The force sensor element according to the present invention allows simultaneous measurement of a shear force and a normal force applied to the sensor element. Moreover, a rheometer is provided which comprises a force sensor based on stress-optic material.